3.3 Exam – Part 2

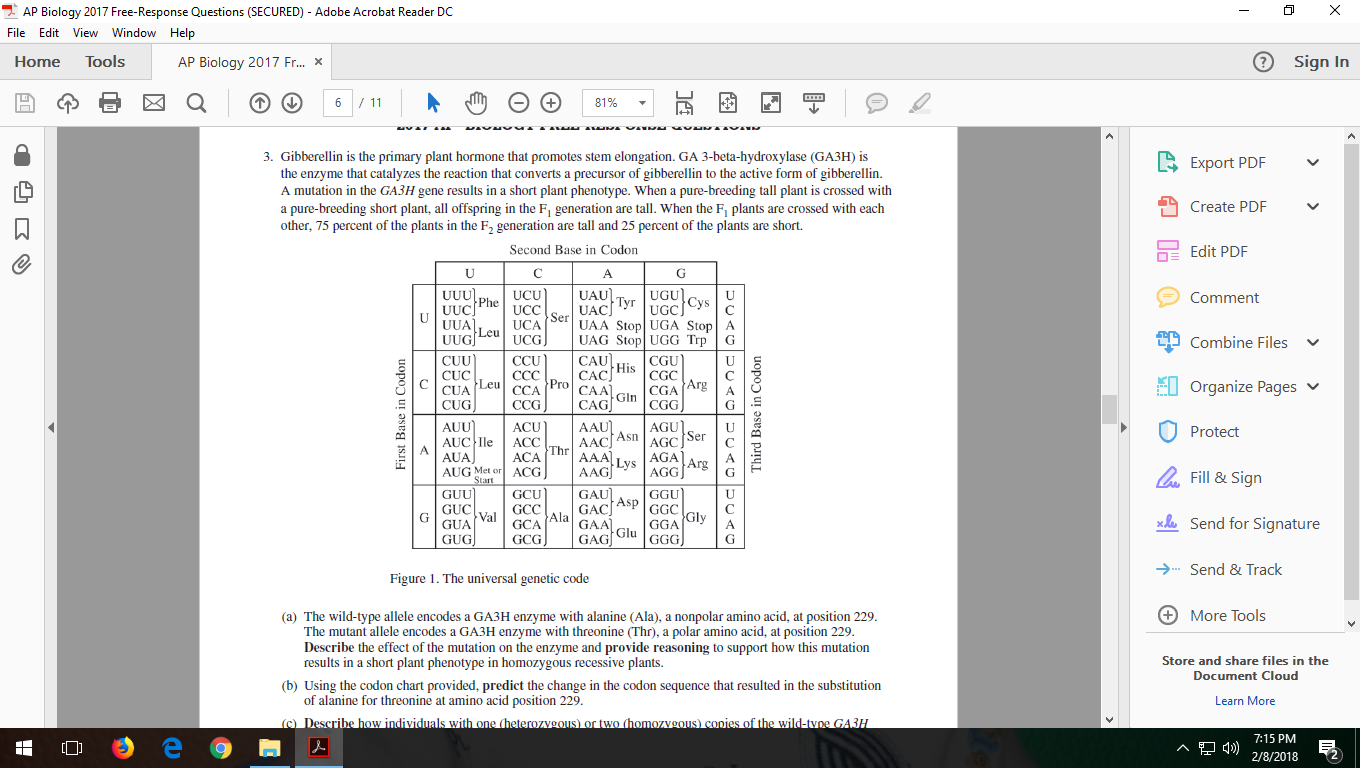
AP Biology

2017 - 2018

This portion of the exam consists of 2 FRQs totaling 10 points

* FRQ 1 values 6 points
* FRQ 2 values 4 points

1.



**(c) Identify which class of point mutation this would be considered, in reference to its effect on phenotype.**

**(d)** Besides mutations, **identify** TWO other natural mechanisms that can alter an organism’s genome during its lifetime. The mechanisms identified should NOT involve any human manipulation.

A.

* CHANGING NONPOLAR TO POLAR AMINO ACID CAN CHANGE ITS ABILITY TO BIND TO PRECURSOR MOLECULE NEEDED TO MAKE GIBBERELLINS.
* GIBBERELLIN PROMOTES STEM ELONGATION SO LESS GIBBERELLIN LEADS TO LESS STEM ELONGATION, THUS A SHORT PHENOTYPE.

B.

* G CHANGED TO A

C.

* MISSENSE

D.

* TRANSDUCTION, TRANSFORMATION, TRANSPOSONS, CONJUGATION

2.



A.

* ACTION POTENTIAL TRIGGERS CALCIUM TO BE RELEASED IN SYNSPATIC TERMINALS OF SENSORY NEURON.
* CALCIUM TRIGGERS VESICLE FUSION WITH SYNAPTIC TERMINAL MEMBRANE & RELEASE INTO SYNAPSE.
* NEUROTRANSMITTERS DIFFUSE ACROSS SYNAPSE TO THE INTERNEURON.

B.

* ALTERNATIVE SPLICING LEADS TO MANY RECEPTORS BASED ON MANY COMBINATIONS OF LIMITED NUMBER OF GENES BEING SPLICED DIFFERENTLY.

-OR-

* SINGLE RECEPTOR CAN BIND MANY ODOR MOLECULES, TRIGGERING UNIQUE SIGNALING PATHWAY DEPENDING ON THE ODORANT MOLECULE.